REMARKS

Applicants have amended the title and the specification. The amendment to the specification is supported by Figures 1 and 2, the original claim 6, and the paragraph starting at line 18, page 2 of the specification.

Applicants acknowledge that claims 8, 9, and 21 would be allowable if rewritten in independent form including the limitations of the base claim and intervening claims.

Claim rejections under 35 U.S.C. 102(e)

Claims 1-7, 10, and 13-16 are rejected under 35 U. S. C. 102(e) as anticipated by Jansson as evidenced by Vittoz et al. Applicants submit that nether Jansson nor Vittoz discloses or suggests "a bias circuit having a relatively constant current source configured to create a relatively constant bias voltage ..., the current source and the inverting amplifier not forming a feedback loop," as recited in amended claim 1.

In Figures 1 and 2 of the present application, there is no connection between transistors M_{n2} and M_{n3}, and thus the inverting amplifier and the current source do not form a portion of a feedback loop.

By contrast, both Jansson and Vittoz disclose circuits in which an amplifier and a circuit generating a bias voltage to the amplifier form a portion of a feedback loop that is used to control the bias voltage. Jansson discloses: "The gain of the present crystal oscillator is automatically regulated using a closed loop circuit design. In accordance with the present invention, the peak detector compares a reference signal with an amplified and inverted oscillation signal produced by the crystal resonator, and generates a feedback signal as a result of the comparison. The feedback signal is used to control a bias circuit that, in turn, controls the amplified inverted oscillation signal generated by the inverting amplifier." (col. 4, lines 44-53)

In FIG. 3 of Jansson, the inverting amplifier 22 is connected to an amplitude regulation circuit 24 through a capacitor JC3 (as labeled by the Examiner). Transistors J_{mp3}, J_{mn3}, J_{mn2}, and J_{mp2} (as labeled by the Examiner) form a feedback loop that controls the bias voltage of the

Applicant : Chinnugounder Senthilkumar et al.   Attorney's Docket No.: 10559-649001 / P12971
Serial No. : 10/053,198
Filed   : January 17, 2002
Page   : 11 of 12

inverting amplifier. Likewise, in FIG. 4 of Jansson, the inverting amplifier 50, peak detector 701, and bias circuit 60 form a feedback loop that controls a bias signal output from bias circuit 60.

In Vittoz, Fig. 12 shows transistors T_1, T_3, T_4, and T_2 that form a feedback loop: "The dc gain of the closed loop made up of transistors T_1, T_3, T_4, and T_2 is higher than one so that the currents in both branches increase to high values limited by the output characteristics of T_2 and T_3." (left column, page 229)

For the reasons discussed above, claim 1 is patentable. Claims 2-7, 10, and 13-16 are patentable for at least the same reasons as claim 1.

Claims rejected under 35 U.S.C. 103(a)

Claim 11 is rejected under 35 U. S. C. 102(e) as being unpatentable over Jansson as evidenced by Vittoz et al. in view of Volk. Applicants submit that the feature of claim 1 that is missing in Jansson as evidenced by Vittoz is also not disclosed by Volk. In Volk, "[t]he oscillator 202 is a current load inverter controlled by a bias network 204. ... The oscillator input X_{IN} feeds back to a current biasing leg through a low-pass filter 208. (col. 2, lines 50-62) ...

Feedback of the X_{IN} signal to M_3 in the bias network auto-regulates the level of current mirrored in the oscillator 202 [sic] and amplifier 206 [sic] to an optimally low-power state." (col. 3, lines 16-19)"

Thus, claim 11 is patentable over Jansson, Vittoz, and Volk for at least the same reasons as claim 1.

Claims 12 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jansson as evidenced by Vittoz et al. in view of Millman. Claims 18 to 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walsh et al. in view of Jansson as evidenced by Vittoz et al. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Walsh in view of Jansson as evidenced by Vittoz et al. and further in view of Millman.

Applicants submit that claims 11, 12, 17-20, and 22 are patentable for at least the same reasons as claim 1. Applicants ask that all claims be allowed in view of the amendments to the claims and remarks. Also attached are two pages of drawings with changes marked in red, a total of 17 pages (including 5 drawing sheets).

Enclosed is a $72 check for excess claim fees. Please apply any other charges or credits to deposit account 06-1050.

Respectfully submitted,

Date: 8 / 12 / 2003
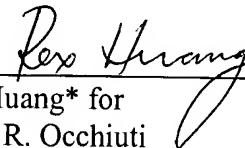
Rex Huang* for
Frank R. Occhiuti
Reg. No. 35,306

Fish & Richardson P.C.
225 Franklin Street
Boston, MA 02110-2804
Telephone: (617) 542-5070
Facsimile: (617) 542-8906

* See attached document certifying that Rex Huang has limited recognition to practice before the U.S. Patent and Trademark Office under 37 C.F.R. § 10.9(b).

20708418.doc

**BEFORE THE OFFICE OF ENROLLMENT AND DISCIPLINE
UNITED STATES PATENT AND TRADEMARK OFFICE**

LIMITED RECOGNITION UNDER 37 CFR § 10.9(b)

Rex Huang is hereby given limited recognition under 37 CFR § 10.9(b) as an employee of the Fish & Richardson P.C. law firm to prepare and prosecute patent applications wherein the patent applicant is the client of the Fish & Richardson P.C. law firm, and the attorney or agent of record in the applications is a registered practitioner who is a member of the Fish & Richardson P.C. law firm. This limited recognition shall expire on the date appearing below, or when whichever of the following events first occurs prior to the date appearing below: (i) Rex Huang ceases to lawfully reside in the United States, (ii) Rex Huang's employment with the Fish & Richardson P.C. law firm ceases or is terminated, or (iii) Rex Huang ceases to remain or reside in the United States on an H1B visa.

This document constitutes proof of such recognition. The original of this document is on file in the Office of Enrollment and Discipline of the United States Patent and Trademark Office.

Expires: May 16, 2004
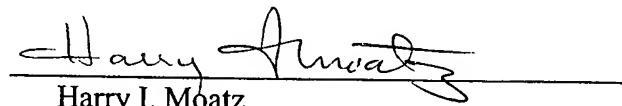
Harry I. Moatz
Director of Enrollment and Discipline